

REMARKS

Claims 1 to 36 and 43 to 54 are pending. Claims 37 and 39 to 42 are canceled. A portion of claim 37 was missing due to a missing page 61, as set forth in a Notice of Omitted Items(s) in a Nonprovisional Application dated October 18, 2004. In response to the Notice, Applicant has elected to accept March 11, 2004 as the filing date of the application as deposited with the Patent Office. To address the missing page issue of the claims, Applicant has renumbered pages 62 to 65 of the claims portion of the application as originally filed as pages 61 to 64. Pages 62 to 65 of the claim portion of the application were renumbered so that the pages of the application will be consecutively numbered from page 1 to page 64. A clean copy of the renumbered pages 61 to 64 is enclosed. Substitution of renumbered pages 61 to 64 for pages 62 to 65 as originally filed is respectfully requested.

As to the claims, claims 37 and 39 to 42 have been canceled to correct the missing page issue. Canceled claims 39 to 42 are re-presented as new claims 57 to 60, as set forth in the Version Showing Amendments to the Claims section of this paper, with the exception of minor changes that have been made to correct grammar. No new matter has been added by this amendment.

Entry of this amendment is respectfully requested.

No fee is believed to be due. Should any fee be required, the Commissioner is authorized to charge such fee to Deposit Account 03-0678.

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**12/17/04
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a plurality of alike magnets mountable to the second support structure for actuating the contact, each magnetic being arranged adjacent to one another and having alike opposed magnetic fields of opposite polarity of a given magnitude, wherein the magnetic fields of the plurality of magnets combine to form a first and second effective magnetic actuator fields of opposite polarity, wherein each effective magnetic field is capable of moving the contact intermediate the open state and the closed state, wherein each magnetic actuator field has a given magnitude of magnetic flux that is greater than the given magnitude of magnetic flux of any one of the magnets of like polarity, wherein at least one of the magnetic actuator fields is oriented transverse to the magnetic actuation area,

wherein the at least one effective magnetic actuator field allows the first structure to move relative to the second structure in a given direction of a desired distance that is greater in magnitude of that the movement of the first structure relative to the second structure with respect to any one of the plurality of magnet, without a change in the electric condition of the control device.

39. The magnetically actuated apparatus as recited in claim 38, wherein the contact is in the open state in the absence of magnetic flux.

40. The magnetically actuated apparatus as recited in claim 38, wherein the contact is in the closed state in the presence of magnetic flux.

41. The magnetically actuated apparatus as recited in claim 38, wherein the contact is in the closed state in the absence of magnetic flux.

42. The magnetically actuated apparatus as recited in claim 38, wherein the contact is in the open state in the presence of magnetic flux.

43. A magnetically actuated apparatus for opening and closing an electric circuit, the apparatus being adapted for use with first and second supports arranged for displacement relative to one another, wherein the apparatus comprises:

a switch secured to the first support to control the flow of electric current to the electric circuit, the switch assembly having a switch that includes a first contact member arranged for displacement relative to a second contact member to open and close the switch, the first contact member having a switch axis,

a plurality of spaced magnets secured to the second support, each magnet having a pole of opposite polarity wherein like poles of each magnet are arranged with their respective magnetic fluxes contiguous to provide a combined region of magnetic flux that is greater than a region of magnetic flux of each magnet, the combined region of magnetic flux being transverse to the switch axis,

wherein said switch is in an open state when the first contact member is spaced apart from the second contact member,

wherein said switch is in a closed state when the first contact member is in close proximity to the second contact member in the presence of the combined region of magnetic flux, the combined region of magnetic flux biasing the first contact member near the second contact member to permit electricity to flow to the circuit,

whereby the combined region of the magnetic flux permits the first support and the second support to move a greater predetermined distance relative to one another than the magnetic flux of each magnet, without a change in the open or closed condition of the switch.

44. An adjustable magnetic switch for controlling an electronic circuit mountable to first and second support members, the switch comprising:

a control arranged to be secured to the first support member having at least one magnetizable contact means arranged for movement intermediate an open position and a closed position to control electric current to the electronic circuit, the at least one contact defining a contact axis,

a magnetic actuator arranged to be secured to the second support, the magnetic actuator having a magnetic field of opposite like polarity in a desired direction to define a substantially continuous magnetic actuation field that is normal to the contact axis for moving the at least one contact between the open position and the closed position,

wherein the at least one contact is in a nonsetting position in the absence of magnetic flux from the magnetic actuation field,

wherein the at least one contact device is in the setting position in the presence of magnetic flux from the magnetic actuation field,

whereby the magnetic actuation field allows the first support to move a desired distance relative to the second support so that the magnetic flux of the magnetic actuation field maintain biases at least one contact to the closed position.

45. The switch as recited in claim 44, wherein the magnetic actuator is mountable to an adjustable member that is securable to the second member.

46. The switch as recited in claim 45, wherein the adjustable member is movable relative to the second member to adjustably locate the magnetic actuator to adjust the given direction of the magnetic field of the magnetic actuator.

47. The switch as recited in claim 45, wherein the adjustable member is secured to the second member by a bracket.

48. The switch as recited in claim 45, wherein the adjustable member further comprises a knob or adjustment tool slot to manually adjust the location of the magnetic actuator.

49. The switch as recited in claim 45, wherein the adjustable member further comprises a sensor to automatically adjust the direction of the magnetic actuator relative to the switch means, so that the magnetic field of the magnetic actuator remains in contact with the switch to bias the contact member to the setting condition.

50. The switch as recited in claim 45, wherein the adjustable member is pneumatically moved relative to the switch by a sensing device that automatically activates an pneumatic actuator to adjust the direction of the magnetic actuator so that the magnetic field remains in contact with the switch to bias the contact member to the setting condition.

51. The switch as recited in claim 44, wherein the magnetic actuator comprises a plurality of aligned alike magnetic fields, each magnetic field having opposite alike poles having magnetic flux of a given direction and magnitude, wherein alike poles define a region of effective magnetic flux for actuating the switch.

52. The switch as recited in claim 51, wherein the switch is a reed switch having a first contact member and a second contact member for forming an electric connection.

53. The switch as recited in claim 52, wherein the reed switch is wired to an alarm switch having an open state and a closed state for setting and triggering the alarm.

54. A method of providing a magnetically actuated apparatus for opening and closing an electric circuit, the apparatus being adapted for use with first and second supports arranged for displacement relative to one another, wherein the method comprises:

5 providing a sensor connected to the electric circuit having an open and a closed state, the switch being mountable to the first support member and comprising a first contact member arranged for displacement relative to a second contact member,

providing a plurality of spaced apart, alike aligned magnetic fields associated with the second support member for selectively displacing one of said contact members, each
10 magnet having a pole of opposite polarity and a region of magnetic flux of a first magnitude in a given direction wherein like poles of the plurality of magnets are arranged adjacent to one another to provide an effective magnetic flux region of a second magnitude that is greater than the first magnitude in the given direction of any one of said plurality of magnets, the effective magnetic flux region being used to displace one of said
15 contact members,

whereby the effective magnetic flux region allows the first and second support members to be displaced relative to one another in a given direction for given a magnitude, that is greater than the displacement of the first and second members relative to the magnetic flux of any one of the magnets, without any change in the electric
20 condition of the sensor.